

OVERVIEW OF LSTF MOVABLE-BED EXPERIMENTS

The Longshore Transport Facility (LSTF) was designed to generate waves and currents and conduct sediment transport experiments at a large scale. The facility consists of an active pumping and recirculation system comprised of 20 independent pumps and pipelines used to control the cross-shore distribution of the mean longshore current. Pumping rates are adjusted in an iterative manner to converge toward the proper settings, based on measurements along the beach. Data are available for three experiments on a moveable bed, all of which were conducted with irregular waves, an incident wave angle of 10 deg and water depth at the wave generators of 0.9 m. Two experiments produced spilling-type breakers; Test 1 having offshore conditions of peak period, T_p , of 1.5 sec, and wave height, H_{mo} , of 0.25 m and Test 5 having $T_p = 1.5$ sec and $H_{mo} = 0.16$ m. Test 3, $T_p = 3.0$ sec, $H_{mo} = 0.16$ m, produced plunging-type breakers. Data obtained on the movable bed include time series of free-surface elevation, orbital wave velocities and unidirectional longshore currents, and suspended sediment concentration levels, bathymetric data, and longshore transport rates.

[Hamilton, D.G., and Ebersole, B.A., 2001. Establishing Uniform Longshore Currents in a Large-Scale Laboratory Facility. *Coastal Engineering*, 42, 199-218.](#)